

Claims

- [c1] A method for pharmaceutical development data management comprising:
 - retrieving data from a plurality of legacy data processing systems useful in aspects of pharmaceutical development;
 - reformatting the retrieved data into XML data; and
 - presenting the XML data to a user through a browser client program.
- [c2] The method of claim 1 further comprising:
 - generating regulatory submission information from the retrieved data; and reformatting the generated regulatory submission information for additional processing.
- [c3] The method of claim 2 wherein the step of reformatting the generated regulatory submission information includes:
 - reformatting generated regulatory submission information according to XML DTDs for additional processing or approvals.
- [c4] The method of claim 1 wherein the step of presenting includes:

displaying a synthesis plan for development of a pharmaceutical wherein the synthesis plan is derived from the retrieved data.

[c5] The method of claim 4 wherein the step of displaying further includes:
displaying chemical synthesis information including molecular drawings and chemical reaction information, wherein the chemical synthesis information is derived from the retrieved data.

[c6] The method of claim 5 wherein the step of displaying further includes:
displaying analysis data integrated with the display of the chemical synthesis information, wherein the analysis data is derived from the retrieved data.

[c7] The method of claim 1 wherein the step of presenting includes:
displaying customer accounting information wherein the customer accounting information is derived from the retrieved data.

[c8] The method of claim 1 wherein the plurality of legacy data processing systems are geographically dispersed and wherein the step of presenting includes:
displaying retrieved data retrieved from a legacy system

at a first geographic location to a user at a second geographic location.

- [c9] The method of claim 1 wherein the step of retrieving comprises:
retrieving data from the plurality of legacy data processing systems wherein each of the plurality of legacy data processing systems is one of the following data processing systems: marketing, pharmaceutical ingredient project management, lab management, analytical services, clinical trial data management and clinical trial statistical analysis.
- [c10] The method of claim 9 wherein the step of retrieving data from the plurality of legacy data processing systems comprises:
linking related project data from the plurality of legacy data processing systems into a single common project.
- [c11] A system for presentation of pharmaceutical development information comprising:
a retrieval engine, responsive to user queries, for retrieving information from any of a plurality of legacy data processing systems each having at least a portion of the pharmaceutical development information; an XML converter, communicatively coupled to the retrieval engine for reformatting the retrieved information as XML mes-

sages; and

a portal server system, communicatively coupled to the retrieval engine and to the XML converter for presenting the XML messages to a requesting user.

[c12] The system of claim 11 further comprising:

a Web browser client communicatively coupled to the portal server system for presentation of the XML messages to the requesting user of the Web browser.

[c13] The system of claim 12 further comprising:

an enterprise internal network communication medium coupling the Web browser client to the portal server system to present the XML messages to users within the enterprise.

[c14] The system of claim 12 further comprising:

a public network communication medium coupling the Web browser client to the portal server system to present the XML messages to users outside the enterprise providing the portal server.

[c15] The system of claim 11 further comprising:

a plurality of legacy data processing systems communicatively coupled to the 15 retrieval engine wherein each legacy system has portions of the pharmaceutical development information.

[c16] The system of claim 15 wherein each legacy system provides at least one of the functions of: marketing, pharmaceutical ingredient project management, lab management, analytical services, clinical trial data management and clinical trial statistical analysis.

[c17] The system of claim 11 wherein each portion of the pharmaceutical development information relates to at least one of: marketing, pharmaceutical ingredient project management, lab management, analytical services, clinical trial data management and clinical trial statistical analysis.

[c18] The system of claim 17 further comprising:
a regulatory submission generator, communicatively coupled to the XML converter for automatically generating regulatory submission information pertaining to the pharmaceutical development information from the XML messages.

[c19] A computer readable storage medium tangibly embodying program instructions to provide a method for pharmaceutical development data management, the method comprising:
retrieving data from a plurality of legacy data processing systems useful in aspects of pharmaceutical develop-

ment;
reformatting the retrieved data into XML data; and
presenting the XML data to a user through a browser
client program.

[c20] The medium of claim 19 the method further comprising:
generating regulatory submission information from the
retrieved data; and
reformatting the generated regulatory submission infor-
mation for additional processing.

[c21] The medium of claim 20 wherein the method step of re-
formatting the generated regulatory submission infor-
mation includes:
reformatting generated regulatory submission informa-
tion according to XMIL DTDs for additional processing or
approvals.

[c22] The medium of claim 19 wherein the method step of
presenting includes:
displaying a synthesis plan for development of a phar-
maceutical wherein the synthesis plan is derived from
the retrieved data.

[c23] The medium of claim 22 wherein the method step of
displaying further includes:
displaying chemical synthesis information including

molecular drawings and 25 chemical reaction information, wherein the chemical synthesis information is derived from the retrieved data.

- [c24] The medium of claim 23 wherein the method step of displaying further includes:
displaying analysis data integrated with the display of the chemical synthesis information, wherein the analysis data is derived from the retrieved data.
- [c25] The medium of claim 19 wherein the method step of presenting includes:
displaying customer accounting information wherein the customer accounting information is derived from the retrieved data.
- [c26] The medium of claim 19 wherein the plurality of legacy data processing systems are geographically dispersed and wherein the method step of presenting includes:
displaying retrieved data retrieved from a legacy system at a first geographic location to a user at a second geographic location.
- [c27] The medium of claim 19 wherein the method step of retrieving comprises:
retrieving data from the plurality of legacy data processing systems wherein each of the plurality of legacy data

processing systems is one of the following data processing systems: marketing, pharmaceutical ingredient project management, lab management, analytical services, clinical trial data management and clinical trial statistical analysis.

[c28] The medium of claim 27 wherein the method step of retrieving data from the plurality of legacy data processing systems comprises:

linking related project data from the plurality of legacy data processing systems into a single common project.

[c29] A portal collaboration user interface system for providing a user access to data from disparate legacy systems where the user interface comprising computer readable program code devices for:

receiving a request from a user to retrieve data relating to pharmaceutical development from disparate legacy database systems;

sending a query to the disparate legacy database systems responsive to the request from the user;

receiving the data relating to pharmaceutical development from the disparate legacy database systems based on the query; and

collating the data and reformatting the data as standard XML format tagged data for presentation of the data to the user in various formats.

- [c30] The user interface system of claim 29 further comprising computer readable program code devices for:
generating an XML defined template format from the XML reformatted data and sending the XML defined template format for presenting to the user using a standard web browser client server interface.
- [c31] The user interface system of claim 30 where generating the XML defined template format includes generating a template for a synthesis plan for development of a pharmaceutical wherein the synthesis plan is derived from the retrieved data relating to pharmaceutical development.
- [c32] The user interface system of claim 31 where generating the XML defined template format includes generating a template for chemical synthesis information including molecular drawings and information derived from the retrieved data relating to pharmaceutical development.
- [c33] The user interface system of claim 32 where generating the XML defined template format includes generating a template for analysis data integrated with the chemical synthesis data where the analysis data is derived from the retrieved data relating to pharmaceutical development.

- [c34] The user interface system of claim 29 further comprising computer readable program devices for:
generating a regulatory submission formatted report from the XML reformatted data for submission.
- [c35] The user interface system of claim 34 where generating a regulatory submission includes reformatting the generated regulatory submission information according to XML DTDs for additional processing or approvals.
- [c36] The user interface system of claim 29 where retrieving data from disparate legacy database includes retrieving data from at least one of marketing, pharmaceutical, ingredient project management, lab management, analytical services, clinical trial data management and clinical trial statistical analysis legacy database systems.
- [c37] A method in a user interface system for providing a user access to data from disparate legacy systems, comprising:
presenting a prompt to a user requesting an input which specifies retrieval of data relating to pharmaceutical development to be retrieved from disparate legacy database systems;
accepting and processing the user request to determine if the user request relates to generating regulatory sub-

mission information or relates to retrieving particular information for presenting to the user;
sending the user request to a portal collaboration user interface system operable to extract data from the disparate legacy database systems based on the request;
and
receiving from the portal user interface system data extracted from the disparate legacy database systems correlated and formatted in a standard XML format and providing the data to the user.

[c38] The method as recited in claim 37 where providing data to the user includes:
displaying a synthesis plan for development of a pharmaceutical wherein the synthesis plan is derived from the extracted data.

[c39] The method as recited in claim 38 where providing data to the user includes:
displaying chemical synthesis information including molecular drawings and chemical reaction information, wherein the chemical synthesis information is derived from the extracted data.

[c40] The method as recited in claim 39 where providing data to the user includes:
displaying analysis data integrated with the display of

the chemical synthesis information wherein the analysis data is derived from the extracted data.